Amendments to the Claims

Claims 1-63 (Canceled).

64. (Previously Presented): An atomic layer deposition method, comprising;

positioning a semiconductor substrate within a deposition chamber;

flowing a first precursor gas to the substrate within the chamber effective to form a first monolayer on the substrate;

after forming the first monolayer, flowing an inert purge gas to the chamber;

after flowing the inert purge gas, flowing a second precursor gas to the substrate under plasma conditions within the chamber effective to form a second monolayer on the substrate which is different in composition from the first monolayer, the second precursor gas being different in composition from the first precursor gas, the second precursor gas flowing under plasma conditions within the chamber commencing before a ceasing of the inert purge gas flowing; and

ceasing the inert purge gas flowing after commencing and while said flowing of the second precursor gas under plasma conditions within the chamber.

65. (Original): The method of claim 64 comprising after forming the second monolayer, commencing another inert purge gas flowing prior to a ceasing of the second precursor gas flowing to the chamber.

66. (Original): The method of claim 64 wherein the plasma conditions comprise application of energy to the chamber at a power level capable of sustaining plasma conditions within the chamber with the second precursor gas; and commencing application of said energy to the chamber at an increasing power level up to said plasma capable power level commensurate with commencing flow of the second precursor gas to the chamber.

67. (Original): The method of claim 64 wherein the plasma conditions comprise application of energy to the chamber at a power level capable of sustaining plasma conditions within the chamber with the second precursor gas; and commencing application of said energy to the chamber at an increasing power level up to said plasma capable power level prior to commencing flow of the second precursor gas to the chamber.

68. (Original): The method of claim 64 wherein the plasma conditions comprise application of energy to the chamber at a power level capable of sustaining plasma conditions within the chamber with the second precursor gas; and commencing application of said energy to the chamber at an increasing power level up to said plasma capable power level after commencing flow of the second precursor gas to the chamber.

69. (Original): The method of claim 64 wherein the plasma conditions comprise surface microwave plasma.

70. (Original): The method of claim 64 wherein the first precursor gas comprises $TiCl_4$, the first monolayer comprises $TiCl_x$, and the second precursor gas comprises H_2.

71. (Original): The method of claim 64 wherein the second monolayer reacts with the first monolayer, the second monolayer comprising components of the first monolayer and the second precursor.

72. (Currently Amended): An atomic layer deposition method, comprising;

positioning a semiconductor substrate within a deposition chamber;

flowing a first precursor gas to the substrate within the chamber effective to form a first monolayer on the substrate; and

after forming the first monolayer, flowing a second precursor gas to the substrate under plasma conditions within the chamber effective to form a second monolayer on the substrate which is different in composition from the first monolayer, the second precursor gas being different in composition from the first precursor gas, plasma generation of the second precursor gas within the chamber occurring from a second applied power of energy to the chamber, and further comprising applying a steady state first applied power of said energy to the chamber prior to applying said second applied power of said energy, the steady state first applied power being less than the second applied power and increasing the first applied power to said second applied power at a ramped rate.

73. (Original): The method of claim 72 wherein said increasing is continuous.

74. (Original): The method of claim 72 wherein the steady state first power is insufficient to generate plasma from flowing the second precursor gas.

75. (Original): The method of claim 72 wherein the steady state first power is insufficient to generate plasma from flowing the first precursor gas.

76. (Original): The method of claim 72 comprising applying the steady state first power during the first precursor flowing.

77. (Original): The method of claim 76 wherein the steady state first power is insufficient to generate plasma from the flowing first precursor gas.

78. (Original): The method of claim 72 comprising flowing an inert purge gas to the chamber intermediate the first and second precursor gas flowings.

79. (Original): The method of claim 78 comprising applying the steady state first power during the inert purge gas flowing.

80. (Original): The method of claim 78 comprising flowing an inert purge gas to the chamber after the second precursor gas flowing, applying the steady state first power during the inert purge gas flowing intermediate the first and second precursor gas flowings and applying the steady state first power during the inert purge gas flowing after the second precursor flowing.

81. (Original): The method of claim 72 wherein the plasma conditions comprise surface microwave plasma.

82. (Withdrawn): The method of claim 72 comprising commencing the increasing prior to commencing the second precursor gas flowing.

83. (Original): The method of claim 72 comprising commencing the increasing after commencing the second precursor gas flowing.

84. (Withdrawn): The method of claim 72 comprising commencing the increasing commensurate with commencing the second precursor gas flowing.

85. (Withdrawn): The method of claim 72 comprising reducing power to the steady state first power after a ceasing flow of the second precursor gas.

86. (Original): The method of claim 72 comprising reducing power to the steady state first power prior to a ceasing flow of the second precursor gas.

87. (Original): The method of claim 72 wherein the first precursor gas comprises $TiCl_4$, the first monolayer comprises $TiCl_x$, and the second precursor gas comprises H_2.

88. (Currently Amended): An atomic layer deposition method, comprising;

positioning a semiconductor substrate within a deposition chamber;

applying a base power level of energy to the chamber with the substrate positioned therein;

while applying the base power level of energy, flowing a first precursor gas to the substrate within the chamber effective to form a first monolayer on the substrate under non-plasma conditions within the chamber;

after forming the first monolayer, raising the base power level of said energy to a power level capable of generating plasma within the chamber at a ramped rate;

flowing a second precursor gas to the substrate within the chamber while said plasma capable power level of said energy is applied to the chamber effective to form a plasma with said second precursor gas against the first monolayer to form a second monolayer on the substrate which is different in composition from the first monolayer; and

after forming the second monolayer, reducing the plasma capable power level of said energy to the base power level and thereafter depositing another monolayer onto the second monolayer.

89. (Original): The method of claim 88 wherein said raising is continuous.

90. (Original): The method of claim 88 comprising flowing an inert purge gas to the chamber intermediate the first and second precursor gas flowings.

91. (Original): The method of claim 90 comprising applying the base power level of energy during the inert purge gas flowing.

92. (Original): The method of claim 90 comprising flowing an inert purge gas to the chamber after the second precursor gas flowing, applying the base power level of energy during the inert purge gas flowing intermediate the first and second precursor gas flowings and applying the base power level of energy during the inert purge gas flowing after the second precursor flowing.

93. (Original): The method of claim 88 wherein the plasma comprises surface microwave plasma.

94. (Withdrawn): The method of claim 88 comprising commencing the raising prior to commencing the second precursor gas flowing.

95. (Withdrawn): The method of claim 88 comprising commencing the raising after commencing the second precursor gas flowing.

96. (Withdrawn): The method of claim 88 comprising commencing the raising commensurate with commencing the second precursor gas flowing.

97. (Withdrawn): The method of claim 88 comprising commencing said reducing after a ceasing flow of the second precursor gas.

98. (Original): The method of claim 88 comprising commencing said reducing prior to a ceasing flow of the second precursor gas.

99. (Original): The method of claim 88 wherein the first precursor gas comprises $TiCl_4$, the first monolayer comprises $TiCl_x$, and the second precursor gas comprises H_2.

100. (New): The method of claim 72 wherein the ramped rate is constant.

101. (New): The method of claim 72 further comprising after forming the second monolayer, reducing power from the second applied power at a ramped rate.

102. (New): The method of claim 72 further comprising after forming the second monolayer, reducing power from the second applied power at a substantially constant ramped rate.

103. (New): The method of claim 88 wherein the ramped rate is constant.

104. (New): The method of claim 88 wherein said reducing is at a ramped rate.

105. (New): The method of claim 88 wherein said reducing is at a substantially constant ramped rate.